THE FORESTS OF UPPER INDIA.

The Forests of Upper India and their Inhabitants. By Thomas W. Webber. Pp. xvi + 344; with 2 maps. (London: Edward Arnold, 1902.) Price 12*s.* 6*d.* net.

THE title of this interesting book is somewhat misleading. In the first place, the author deals with only a fraction of the forests of Upper India, namely those of the districts of Kumaon (with a visit to Thibet), Gorakhpur (with a dash into Nepal), Jansi, Bundelkund, and the northern part of the Central Provinces. In the second place, he gives far more information regarding the inhabitants, whether men or animals, than of the forests themselves. Indeed, the information regarding the latter is very sketchy and not up-to-date. What the author does say in this respect refers to a state of things existing some thirty-five to forty years ago, and we have now far more complete accounts than those contained in this volume. Nor is the information in this respect always very accurate. On p. 38, for instance, he gives the area of the Kumaon hill forests as 15,000 square miles, while the whole district in which they are situated is given as 150 miles long and 100 broad, which also comes to 15,000 square miles. At p. 184, on the other hand, the area of forests surveyed in Kumaon is said to amount to 1074 square miles. Again, at p. 41, it is stated that the silver fir grows on the northern slopes at an elevation of 12,000 feet, whereas that is practically the upper limit, the tree being usually found between 8000 and 12,000 feet. On p. 194, the author says that Sal is found in the Mysore hills and Tenasserim. This may have been believed fifty years ago, but it has long since been found that the southern tree is not Sal, but another Dipterocarp. Of Deodar, the most important tree of the Himalayas, we hear very little.

The information given of the forests serves, as a matter of fact, only as a frame, into which the author places the description of his travels, *shikar*, or sport, and enumeration of animals which he has met. This account will, we feel sure, interest many readers. The author despises ordinary shooting as now practised in these islands, but he loved stalking interesting animals, especially big game, in many of the out-of-the-way places which he visited between the years 1861 and 1871. He also gives an animated account of various wild or uncivilised tribes and their manners and customs. One of the most interesting parts of the book is, no doubt, that in which he tells us that, just inside Thibet, he came across the descendants of the famous Huns, which overran the greater part of Europe some 1500 years ago. Whether his surmise is correct or not, we shall not risk to say, but from the description which he gives of the present-day Huns, it is clear that these must have greatly degenerated since the sojourn of their ancestors in Europe.

The author's account of the animal life in the districts which he visited is very full and is told in an attractive manner. At the same time, we think that literary license and colouring have been employed in a somewhat excessive manner. It is quite wonderful to read of all the different kinds and numbers of quadrupeds and birds which our author has seen and, in many instances, shot. We cannot do better than give an extract from the chapter headed "The Bori Forest" (pp. 299-303):—

"The glory of the village was an immense banian-tree, standing alone and covering half an acre of level ground. . . . This great fig tree is in itself a whole aviary, affording both shade and figs, and insects and grubs, and safety from numerous enemies of the hawk tribe. There is the golden oriole (*Oriolus kundoo*), which makes a melodious whistle very like the ring of glass, short, single, and descending two octaves . . . Many little squirrels . . . came skipping and cocking high bottle-brush ringtails. . . . Among the thick, shiny leaves there is a sparkle of canary-yellow and bright scarlet; this is the female and male minivet or cardinal bird. There are many kinds of woodpeckers, which tap on the stems and screech. A dark-greenish bird sits in the shade—the koel. He makes the grove resound with his frantic cry, 'I've lost my shirt.' . . . The air is full of swifts and swallows, darting ever after insects. . . . At no time or place is there an interval in the wheeling of long-winged kites high overhead. . . . Towards evening . . . a little owl says 'Piu!' from the recesses of the many air-roots which hang overhead. Then . . . a hundred green paraquets screech all together. . . . There are flocks of the common large green paraquet, the smaller rose-collared *tota*, and many kinds of plum-headed paraquets, and slaty-headed and red-breasted parrots of all sizes. . . . There are notes of various owls . . . the purring also of the goatsucker. . . . Stag-beetles drone as they swing by, and cockchafers and the cicadas in the trees keep up a creaking which seems always in the air, and there is never silence."

Who would not like to see such a banian-tree and to sit under it and watch the variety of life here depicted by the author?

Men with a more practical turn of mind would perhaps fasten on another very short passage in this chapter (pp. 309-310), where it is said:—

"The complete exclusion of jungle fires, which had been successfully carried out for some years previously, certainly showed its effect, as fine saplings, grown from seed, of teak and other sorts were plentiful through the forest."

The author dismisses the subject with these few words, and yet this operation was of immense importance, as the protection from fire of the Bori Forest in the Central Provinces was the first thoroughly successful experiment of the kind, continued over some forty years. It was the beginning of a system of successful fire protection now carried on in all Indian provinces, a system which gives protection to some 30,000 square miles of the more valuable Indian forests. One of the greatest achievements of the Indian Forest Department is the success with which such extensive areas of valuable forests are now protected from the devastation formerly wrought in them by the annual forest fires. Whoever may have started the idea, so much is certain, that the officer who was the first to be thoroughly successful in this great work is Colonel Pearson, at that time Conservator of Forests in the Central Provinces.

In the appendix, the author gives us his ideas of "the scientific management of forests," and he winds up by reading a lecture to the Government on the neglect which forestry has met with in these islands. The author draws attention to the serious consequences which are likely to arise if something substantial is not done at once in augmenting the wooded area of Great Britain and

Ireland, as well as in introducing some rational system of management into the forests of the colonies. Let us hope that his words will fall on fruitful ground.

In conclusion, we cannot omit expressing our admiration for the cheerful way in which the author went through most fatiguing journeys and the healthy tone of his remarks on the love of nature. We feel sure that the attractive way in which the book is written will secure for it many readers.

THE ASCENT OF MIND.

Mind in Evolution. By L. T. Hobhouse. Pp. xiv + 415. (London: Macmillan and Co., Ltd., 1901.) Price 10*s.* net.

IN this able and thoughtful work, Mr. L. T. Hobhouse distinguishes five stages of correlation in the ascent of mind, from the first glimmerings of consciousness in some lowly organism of primeval times to the systematic thought of the man of science or the philosopher and the intuitive insight of the poet or artist. The first of these, placed in a category by itself, is the pre-intelligent stage, wherein there is an indirect correlation of experience, reaction and welfare before intelligence (which is defined as the capacity of the individual to learn from experience) comes into play. The behaviour of the organism is, at this stage, the outcome of inherited structure, and if any variation of structure secures a more suitable response, that is, one better adapted to preserve the organism or its offspring, such a structure would tend to be "selected," since the individual in which it occurred would have an advantage in the struggle for existence. In this way, inborn tendencies to a given method of response may be correlated with the past experiences of the race.

It will be noticed that the word "experience" is here used in a non-psychological sense. Instinctive reactions are the culminating products of this stage of pre-intelligent development. Above and beyond this comes the comprehensive category, the second of the two which Mr. Hobhouse distinguishes, wherein the correlation is based on individual (psychological) experience. This category comprises four stages; first, that of the unconscious readjustment, where the pleasure or pain consequent upon instinctive or random response to stimuli modifies subsequent reactions in a manner determined by the nature of the feeling; secondly, that of concrete experience and the practical judgment. Here behaviour becomes purposive, and the appearance at this stage of actions definitely directed to, and determined by, the ends which they serve, is regarded by Mr. Hobhouse as perhaps the most critical moment in the evolution of mind. In purposive action, so far as it is purposive, there is no fixed habit, but the response to the surroundings is determined by the effect which it will have in the particular case; that is to say, by the relation between act and consequence. Hence the organism at this stage does not respond uniformly to similar surroundings, but takes into account anything that, though outside the range of immediate perception, is relevant to the object to be attained. Within this stage are reached the limits of animal intelligence.

The connection between the perceived relation and the action based on it remains, however, unanalysed. The steps by which this bond of connection is analysed out as a distinct content of thought lead us to the third stage, that of conceptual thinking and will, and of the correlation it involves, language, both as cause and effect, is the central feature. In scope, the correlation that is now made possible is immeasurably widened. In the conceptions of this stage, thought first finds itself possessed of contents set free from the line of practical interests and also from strict conformity to the perceptual order. In this way a "world of ideas" is formed, going beyond as well as behind experience, and the conceptions which people this world form ideal schemes to which grouped experiences may be referred. Conduct is adjusted to meet the requirements of self or others as persons, of society as an abiding structure, or of morality as a system of universal rules. In fine, the correlation is now between the focussed results of connected bodies of experience and broad purposes of life or general standards of conduct.

The fourth and last stage—that of rational system—arises when the formation of a coherent, self-supporting, exact and exhaustive body of knowledge begins to be an explicit object of mental effort. The stage would be complete when such a system should embrace the conditions and possibilities of evolution, and should reach a complete synthesis of reality as a whole.

Such, stated for the most part in his own words, is a summary of the successive steps which Mr. Hobhouse traces in the ascent of mind. His work is characterised by breadth of view, logical development and fertility of illustration. It is an earnest attempt to grapple honestly and fairly with difficult problems in a spirit of serious investigation. Personally, I am of opinion that Mr. Hobhouse's psychological stages one and two—those of unconscious readjustment and of concrete experience—are much more closely related than is concrete experience to conceptual thinking, which again shades off into that of rational system. Dr. Stout's broader division into perceptual and ideational phases of mental development seems preferable. Within these might fall Mr. Hobhouse's subdivisions. The generic differences between the broader categories are not difficult to trace; but the specific differentiation of the subgroups is a less easy matter and one which leaves room for more difference of opinion.

A noteworthy feature of Mr. Hobhouse's work is the careful record of observations conducted under experimental conditions on cats, dogs, a rhesus, a chimpanzee, a seal and an elephant. His method seems preferable to that of Dr. Thorndike, since the conditions are less cramping to the intelligence; and though his interpretation is in some cases open to criticism, his honesty of purpose is unquestionable. If, making due allowance for differences in the usage of technical terms, for diversities of outlook, in a word, for the personal equation, we compare his results—for example in the study of monkeys—with those of Dr. Thorndike and of Mr. Kinnaman, we cannot but be struck by the large measure of agreement that may be found in views which, to some readers of their works (and perhaps still more to the writers themselves), may seem divergent. C. LLOYD MORGAN.